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ABSTRACT

This document describes a case study of a competency-based vocational education (CBVE) project. An introduction outlines the nature of CBVE and places it in the context of vocational competence. This section also describes a rationale for how CBVE relates to the individual, to access, and to the recognition of previous learning. The features and processes of CBVE and their status are also defined. Section 2 discusses DACUM (Developing a Curriculum) as a highly structured example of CBVE and outlines its main features: occupational analysis, a list of competencies, and a statement of criteria for each competency. Section 3 describes the case study in the Department of Catering Services, Burton upon Trent Technical College, England, which adapted and implemented material developed in Canada. Section 4 reports the reactions of students, tutors, and employers to the CBVE project. It was found that employers liked the CBVE approach for its increased relevance and their participation, the students eventually appreciated the freedom and responsibility it gave them, the results were at least as good as for previous traditionally taught groups, and the results were achieved in one year instead of two. Section 5 reviews the Burton upon Trent pilot study in the light of the Further Education Unit aims. Appendixes include information on CBVE and the DACUM process, results of the student survey, and a staff guide to using the CBVE approach. (YLB)

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COMPETENCY-BASED VOCATIONAL EDUCATION

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PROJECT REPORT

COMPETENCY-BASED VOCATIONAL EDUCATION

A CASE STUDY

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Further Education Unit

Professional, Industrial and Commercial Updating

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CONTENTS

		Page
	Foreword	v
1.	Introduction to Competency-Based Vocational Education (CBVE)	1
2.	DACUM	11
3.	A Case Study in CBVE	13
4.	Results from the Case Study	21
5.	A National Perspective	28
	References	34
	Appendices	
	1. Developing the Concept of Competency-Based Programmes	35
	2. A DACUM Chart for Cookery for the Catering Industry	40
	3. Improving Learning Skills of CBVE Students	43
	4. Student Enquiry as to Validity and Effectiveness of System: Results of Study	46
	5. Improving the Effectiveness of CBVE Tutors: A Staff Guide to Using the CBVE Approach	48
	6. Caterbase	50

FOREWORD

i) The following document by Bob Kenyon and Graham Hermann provides a useful and timely contribution to the expertise that will increasingly be required as the new National Council for Vocational Qualifications gets under way. The appendices contain a wealth of material.

ii) The Introduction to the document outlines the nature of Competency-Based Vocational Education (CBVE) and places it in the context of vocational competence. This section describes a rationale for how CBVE relates to the individual, to access, and to the recognition of previous learning.

iii) The FEU has elsewhere[1] defined competence in a context wider than vocational education. It has also[2] analysed the components of vocational competence in terms of its assessment. These various definitions are mutually compatible: vocational competence is considered to be a subset of competence. The detailed competences to be developed in CBVE are thus elements of vocational competence.

iv) Section 1 of the document also defines the features and processes of CBVE and their status. Curriculum design, teaching/learning methods, curriculum materials, student assessment, and staff development comprise the main features. The curricular processes associated with CBVE will be seen to include *occupational analysis*. This is a much neglected area in FE in so far that we assume that it is done for us by other agencies. This assumption is not always well founded and therein may lie the root of much of the criticism that is levelled at the FHE system.

v) This document is valuable because in discussing the utilisation in the case study of a list of competences derived using the DACUM methodology, it introduces us to an economic and relatively rapid method of occupational analysis. Section 2 describes DACUM as a highly structured example of CBVE, and outlines its main features: occupational analysis, a list of competences, and a statement of criteria for each competency.

vi) Section 3 describes the case study, funded by FEU, in the Department of Catering Services, Burton upon Trent Technical College. This project adapted and implemented material developed in Canada and, by any measure, the work put into the project — by staff and students — is impressive. The pilot group of students was smaller than anticipated and this prohibited a comparative study but, as Section 4 indicates, the generic features of CBVE (see (iv) above) were generally satisfied.

vii) Section 4 describes the reactions of students, tutors and employers to the CBVE project. With its demanding specification, its inherent flexibility, and

1. *Towards a Competence-Based System* FEU, August 1984
2. *Assessment, Quality and Competence* FEU/Longman, September 1986

its promotion of learner autonomy, the CBVE approach is not an easy option for either students or staff. However, notwithstanding the smallness of the group, the results were very worthwhile. The employers liked it for its increased relevance, and their participation. The students eventually appreciated the freedom (and responsibility) it gave them. The results were at least as good as for previous (traditionally taught) groups, and these results were achieved (in some cases) in half the time! (one year instead of two). And as for the staff: the scheme has now been extended to a much wider range of students.

viii) Section 5 reviews the Burton upon Trent pilot study in the light of the FEU project aims. The review indicates that such an approach can relate to local needs, to the wider catering industry, and to more central education/training agencies. The project also demonstrated that a more flexible approach to attendance and to learning was possible, whilst still satisfying the CGLI requirements. The project further confirmed that the production of a competency-based student profile was possible although some of the employers found it too complex, initially at least.

ix) More work probably needs to be done on the materials if they are to be more user-friendly and if they are to relate more efficiently to other schemes such as CGLI/BTEC and/or Caterbase[3]. However, the value of the case study is not so much its immediate application to catering (as good as that was found to be) but its demonstration of the principles of CBVE in action, which should be applicable to a wider range of vocational education and training (VET).

x) The FEU has pointed out elsewhere[4] that quality of learning is embedded in more processes than simply the definition of standards and their testing. CBVE, as described and illustrated here, brings together curriculum design, teaching/learning methods, materials, and assessment. It thus has an integrating effect on the whole VET process and, incidentally, describes roles for the FHE system.

xi) I wish to record here my appreciation to Graham Hermann, visiting consultant to the FEU from Macquarie University (New South Wales), who kindly agreed to place the Burton upon Trent project in the wider context of Competency-Based Vocational Education, and objectively evaluated that project. My thanks also must go to Bob Kenyon and his staff for the considerable effort put into this project and for the tolerance and understanding shown to Graham Hermann and myself in developing their original report.

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Chief Officer
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3. See Appendix 6

4. *Response to RVQ Final Report* FEU, July 1986

1. INTRODUCTION TO COMPETENCY-BASED VOCATIONAL EDUCATION

Competence, vocational competence, and competency

1. The community expects car mechanics to repair brakes competently, expects carpenters to build safe structures, expects cooks to prepare food hygienically, expects electricians to wire buildings safely, and so on. Employers expect the graduates of vocational courses to perform their occupational tasks competently; presumably, this expectation will be expressed more frequently following the release of the *Review of Vocational Qualifications* Report (1986). Students of vocational courses want to attain the necessary competence to assist in obtaining and maintaining desired employment, and in enjoying that employment. Vocational competence is valued highly.

2. **Competence** has been defined as:
'the possession and development of sufficient skills, knowledge, appropriate attitudes and experience for successful performance in life roles. Such a definition includes employment and other forms of work; it implies maturity and responsibility in a variety of roles; and it includes experience as an essential element of competence.' (*Towards a Competency-Based System* FEU, 1984, p.3)

3. **Vocational competence** may be considered as a subset of competence, and includes knowledge, understanding, skills, tasks, attitudes, experience, and roles (FEU, 1986); it is competence in a specific occupation. But how can competence in a specific occupation be defined and assessed? Presumably by listing 'those tasks, skills, attitudes, values, and appreciations that are deemed critical to successful employment' (Finch and Crunkilton, 1979, p.220.) in a specific occupation, i.e. by listing a set of specific competencies which detail general competence in an occupation. A competency is considered to be an element of vocational competence.

4. A **competency** may be defined as a performance capability needed by workers in a specified occupational area. Competencies may be cognitive, attitudinal, and/or psychomotor capabilities. A competency does *not* imply perfection: it implies performance at a stated level (criterion). The criterion level needs to be specific for each occupational area. For example, an appropriate competency for a receptionist may be to type at 25 words a minute for 15 minutes with a maximum of two mistakes every 150 words, whereas, for a typist, the appropriate competency may be to type at 40 words a minute for 30 minutes with a maximum of two mistakes every 250 words.

5. A competency has the following characteristics:

- it is a small, finite piece of behaviour (e.g. part of a task, a skill, a performance demonstrating cognitive attainment);
- it refers to a specified occupational area;
- it can be measured;
- performance criteria are often given;
- conditions of performance may be given.

6. A one-day workshop programme may contain one or two competencies. A short course may contain 10 to 20 competencies. A longer course may contain 50 – 200 competencies. The attainment of a competency indicates that the person is able to perform that competency at a prespecified level.

7. A systematic approach to ensuring that learners in an occupational programme gain prespecified competencies is known as *Competency-Based Vocational Education* (CBVE). Such an approach has implications for curriculum, materials design, and student assessment.

The rationale for CBVE

8. The desire for *vocational competence* by the community, by employers, and by learners has been raised above. There is also the desire for educational provisions which accommodate the *needs of learners* during their working life: 'Every individual must be in a position to keep learning throughout his life . . . Educational insititutions and means must be multiplied, made more accessible, offer the individual a far more diversified choice'. (Faure, 1972, p181 and 183). Such a desire is addressed by CBVE in:

- seeking to meet the needs of individual learners, including learners with disabilities;
- seeking to make institutions more accessible: for example, by offering open-entry, open-exit programmes; by seeking to provide different attendance patterns; by seeking to increase co-operation among institutions.

9. The desire for educational provisions which accommodate *past and current experiences of learners:* 'Education should be dispensed and acquired through a multiplicity of means. The important thing is not the path an individual has followed, but what he has learned or acquired'. (Faure, 1972, p.185). Such a desire is addressed by testing those competencies which a student believes have been attained 'outside the institutions', and certifying those competencies which, from the assessment, are shown to have been attained.

10. The desire for *effective learning* is addressed by:

- focusing learning on the occupational competencies specified;
- using mastery learning approaches.

11. The desire for *effective assessment* of student learning is addressed by:

- listing competencies needed for the occupational area;
- stating the specific criteria which clarify each competency;
- giving primary attention to the application (transfer) of the learning to actual work situations.

Features integral to, or associated with, CBVE

12. Features associated with CBVE are listed in Table 1. Each of these features is discussed in the subsequent sections. The *status* column indicates whether people knowledgeable about CBVE hold the feature to be essential.

Table 1: Features integral to and associated with CBVE

Area	Feature	Status
Curriculum Development	1. Occupational analysis	Essential
	2. Statement of criteria for each competency	Usual[1]
	3. Selection of competencies for a specific programme	Usual
	4. Integration of theory and practice	Usual
	5. Focus on transfer (application)	Usual
	6. Alternative attendance patterns	Frequent[2]
	7. Open-entry open-exit arrangements	Usual
Teaching/ Learning Methods	8. Focus on competencies	Essential
	9. Students given list of competencies (and criteria)	Essential
	10. Mastery learning methods	Usual
	11. Self-paced learning	Usual
	12. Immediate and comprehensive feedback to students	Usual
	13. Students given assistance in 'learning to learn'	Usual
	14. Students encouraged to accept responsibility for learning	Usual
Curriculum Materials	15. Learning Activity Packages available, tied to specific competencies	Usual
	16. Alternative media available	Usual

Table continues over

1. Usual — the feature is highly preferred, but is not considered by all commentators to be essential.
2. Frequent — this feature is considered important by some commentators.

Table 1: (continued)

Area	Feature	Status
Student Assessment	17. Criterion-referenced post-tests	Essential
	18. Results shown as competencies attained	Essential
	19. Criterion-referenced pre-tests	Usual
	20. Maintenance of record system	Essential
Staff Development	21. Staff act as facilitators of learning	Usual

CBVE features relating to curriculum development

Occupational analysis

13. The determination of competencies in an occupational area is termed an *occupational analysis*. This feature is the most basic element of CBVE. If one is to learn a set of competencies, it is vital to ensure that these are needed for the occupational area.

14. Thus major attention needs to be given to determining the list of competencies. It is generally not sufficient to ask industry (including commerce and government) its needs for a specific occupational area, since:

- many representatives of industry know their own enterprise, but have only limited knowledge of other enterprises in their sector of industry;
- many representatives of industry have been promoted away from the jobs performed by many workers in the enterprise, and may not be up to date concerning the detailed competencies;
- assessing the occupational needs of industry can be a complex task.

15. Table 2 lists the three phases of occupational analysis, together with some techniques which may be used for that phase (from Hermann, 1986b).

Table 2: The three phases of occupational analysis

Phase	*Possible techniques*
1. Scope of occupational area	Information search Interview Observation Group methods

2. List of competencies	Information search Interview DACUM group method Observation Critical incident technique
3. Data on each competency (needed only if priority among competencies required), e.g. extent of performance; importance.	Information search Systemic survey (e.g. CODAP)

16. It is vital to ensure that the list of competencies is comprehensive. In addition to the more 'conventional' competencies, such as psychomotor and cognitive procedures (e.g. accounting procedures), the more 'refractory' competencies should be included, such as: communication, interpersonal, management/supervision, planning, high-level cognitive (problem-solving, analysing, synthesising, evaluating), safety, and attitude-related. As well as an occupational analysis, curriculum developers need to undertake other analyses; for example, into the needs and attainments of prospective students.

Statement of criteria for each competency

17. As often as possible, the criteria will be those which specify the competency in occupational terms. However, there are occasions when less demanding sets of criteria are specified, the criteria being expressed in teaching (course) terms. It is assumed that the attainment of the competency to course standards will, with additional relevant experience, lead readily to the attainment of the competency to occupational standards.

18. It is expected that competencies will be stated in sufficient detail to be communicated effectively to all concerned: curriculum developers, tutors, employers, and students. Such a level of specificity will generally involve the inclusion of a set of minimum criteria. The competency 'The person must be able to use a lathe' is far too vague for virtually all relevant occupational areas; some indications of speed and accuracy in using the lathe are required. The statement of criteria is especially useful for student assessment purposes.

Selection of competencies for a specific vocational education and training (VET) programme

19. This is generally undertaken by selecting those competencies most 'fundamental' to an occupational area, based on frequency of use or importance (what are the consequences if a person is unable to perform that competency?). In some programmes, the learners are able to select those competencies they

wish to attain (e.g. if small selective units are available; if students working in the occupational area only desire to attain a few specific competencies to meet the demands of their job).

Integration of theory and practice

20. *Theory* in this context can be defined as a framework of principles and experience which will guide the application of competencies. *Practice* can be similarly defined to include the components of:

- planned practice — to elucidate the relationship between theory and practice;
- competency development — to develop speed and accuracy; and to develop planning, the judgement of application (transfer), and judgement on adaptation of competencies;
- general industrial experience — to develop an understanding of the context of a job (e.g. pace, stress, environment).

Transfer is much more likely to occur if the theoretical and practical aspects of an occupational course can be integrated (rather than presented as separate bundles).

Focus on transfer (application)

21. As the aim of a CBVE programme is job competence, care needs to be taken to ensure that the competencies learned in the course can be transferred to the actual work situation. Transfer may be thought of as a four-step process involving: the original learning (of the principle, procedure, etc.); relating the new situation to the original learning; remembering (or relearning) the original learning; and problem solving (in applying the original learning to the new situation). Transfer is assisted by ensuring that each of these four processes operates effectively, by using such teaching/learning procedures as clear statement of principles (procedures, facts, etc), overlearning, variety of examples, examining the applicability of learning to new situations, and integrating theory and practice.

Availability of alternative attendance patterns

22. A range of attendance patterns and timetabling flexibility allows students who may not be able to attend some sessions (due to sickness, accident, shift work, responsibility for young children, and so on) the option to attend other sessions. If learning activity packages are available, if self-paced methods are used, and if students can be tested for the attainments of competencies as soon as they feel ready, the range of attendance patterns can include external mode and fleximode (a combination of external and internal modes), in addition to full-time, part-time day, part-time evening, block, and sandwich.

Open-entry open-exit arrangements

23. Most conventional programmes only admit students at the beginning of the academic year, whereas most CBVE programmes have the desirable feature of being able to admit students whenever they apply. Likewise, programmes can be completed as soon as the competencies specified or desired by a student are attained.

24. A curriculum with the CBVE features described above can be applied to a variety of occupational frameworks and models, including single course, core plus electives, family of occupations, generic skills, core skills, and student selection models/frameworks.

CBVE features relating to teaching/learning methods

Focus on competencies

25. The focus is on competence to perform rather than only on competence to pass exams. 'Theory' is provided as a framework within which competencies are to be learned (rather than being taught 'for their own sake'). It is felt that such an approach is motivating; students can readily see the relevance of the theoretical underpinning.

Students given list of competencies (and criteria)

26. It has been found that the provision to the students of information on what is to be learned generally increases intentional learning (e.g. Davies, 1976; Klauer, 1984).

Mastery learning methods

27. In a mastery learning method, the student continues to learn the material until passing a test at the specified performance level. Should the test *not* be passed, further learning of the same material is undertaken (preferably involving different teaching/learning approaches), until mastery is attained. Arlin (1984) cites a number of reviews which have found with respect to student achievement that mastery methods are consistently superior to traditional methods.

Self-paced learning

28. Self-pacing is characterised by allowing students to move through a course at different rates. It is frequently advocated as an effective method of individualising instruction, since it allows the attainment of prerequisite skills, mastery of learning, frequent feedback, and the use of a variety of media. In his review of research on systems involving self-pacing, Hermann (1986a) found:

- there is some overall increase in the amount learned;
- there is a major saving in learning time (often about 33%);
- students prefer self-paced methods to traditional instruction.

Immediate and comprehensive feedback to students

29. In their reviews, the value of comprehensive feedback has been demonstrated by Beach (1979), and of immediate feedback by Kulik *et al.* (1976).

Students given assistance in 'learning to learn'

30. 'Self-management' skills, such as self-direction, respect for others, group co-operation, self-confidence, self-evaluation, and self-initiative are needed by students when they start a self-paced course. Students without these skills should be assisted by tutors to develop them. When starting a CBVE programme, with features different to traditional teaching/learning methods, students need much tutorial assistance to help them to understand what is expected of them.

Students encouraged to accept responsibility for learning

31. Adult students are themselves responsible for the effort they devote to learning. However, primary responsibility can only be ascribed to learners if the tutors provide effective sets of materials and other content inputs, effective guidance, and arrangements which effectively meet the needs of the learners as individuals.

CBVE features relating to curriculum materials

Learning Activity Packages (LAPs) available, tied to specific competencies

32. A LAP may be defined as a self-contained set of materials designed to help the learner to master specific competencies. A LAP typically has the following components:

- list of competencies prerequisite to LAP (if relevant, a pretest to determine if student has prerequisite competencies);
- introduction;
- list of competencies to be attained;
- pretest (to determine if student has already attained the competencies to be learned);
- learning activities (e.g. directions and advice on materials to be read, videos to be watched, objects to be made). A self-test is generally provided for each learning activity;
- resource materials;
- post-test.

Alternative media available

33. The availability to the learner of alternative media has a number of advantages. Students with particular needs and characteristics may prefer a specific medium; for example, learners with reading problems could prefer audio-tapes. It is very useful to have alternative media available for students who do not attain a competency at the first attempt; it is generally advantageous for such students to restudy the same competency using a different medium (or set of media).

CBVE features relating to student assessment

Criterion-referenced post-tests

34. A good norm-referenced test indicates whether a brain surgeon is better or worse at the test than other brain surgeons, but *not* whether he/she is competent. However, a good criterion-referenced test indicates that a specific competency has been attained to the prespecified criteria. Criterion-referenced post-tests are used in virtually all CBVE programmes, and are generally able to be taken when a student feels ready.

Results shown as competencies attained

35. Test results are generally shown as lists of competencies attained, rather than the traditional letter grades awarded for large blocks of work (e.g. subjects).

Criterion-referenced pre-tests

36. The emphasis in a CBVE programme is on performance capability, rather than on subjecting all students to an identical teaching programme. Thus students who feel that they have already attained competencies from previous experiences (whether from home, work, another institution, etc.) can be pre-tested for a competency. Should it be demonstrated that the competency has been attained, it is credited to their records, and they can proceed to competencies not yet attained.

Maintenance of record system

37. The institution maintains a list of competencies attained by each student. This system of student assessment allows:

- career-long progression (e.g. in food service education/training). As a person moves to different jobs, additional required competencies can be studied (in contrast to the traditional system where it would usually be necessary to take a complete subject or course);
- transfer of competency credits from one institution to another. This

would involve co-operation among institutions (e.g. the formation of a consortium with respect to the specific content areas; one institution, either a college or a central body, awarding credit for each competency demonstrated);

- accredited bodies to test the attainment of competencies. For example, a college could accredit an employer to certify that a specific competency had been attained by an employee; such an arrangement would involve much college-employer interaction;
- the development of individual learning paths. The learners would discuss their individual needs with college staff and, as relevant, employers.

CBVE features relating to staff development

Staff act as facilitators of learning

38. Based on her literature review, Pearson (1983) states that successful individualised instruction requires: a commitment on the part of the tutors to the programme; tutors having an understanding of the principles, components and theoretical framework of the programme; and appropriate in-service tutor development.

39. Staff must be able to act as tutors over the whole of the course (since learners could cover that spectrum within the one session), be able to integrate the theory and practice, and be able to act as a learning facilitator for individuals and groups. A staff development programme could consist of:

- increasing the competence of tutors in the occupation they are teaching;
- increasing the competence of tutors to act as effective facilitators of student learning.

2. DACUM

40. DACUM (Developing a Curriculum) is a highly structured example of CBVE. It was initially developed for the Canadian Department of Manpower and Immigration, and has been used widely since then in Canada and in other countries. Specific features of DACUM related to the case study are discussed below.

Feature 1. Occupational analysis

41. DACUM may be considered as a single-sheet profile of the competencies needed in a specific occupational area. The procedure involves the identification of about twelve workers and/or supervisors, expert in the occupational area being considered. These persons act as a working group, following a structured procedure in obtaining grouped lists of competencies.

42. In developing a DACUM profile, the initial steps involve a trained DACUM user instructing the participants in the DACUM procedure, and reviewing the occupational area. The General Areas of Competence, each representing a group of competencies, are then developed by the participants; for an occupation, about ten such General Areas could be listed. Then, for each General Area of Competence in turn, the relevant competencies (typically five to fifteen) are listed. Each competency is prefaced by 'The person must be able to', followed by a simple action definition. Finally, the complete profile and each competency statement are reviewed, and refined as considered desirable. A competency statement is accepted by the working group when it is felt that most people with an adequate background in the occupational area would understand what is meant by the statement.

Feature 1a. Profile of competencies

43. A feature especially associated with DACUM is the display of competencies as a single sheet profile. Such a profile has the following format:

General Areas of Competence	*Competencies*		
(1) e.g. COMMUNICATE EFFECTIVELY	Advise customer of condition of unit and need for future repairs	Advise customers of safety requirements	*etc.*

General Areas of Competence	*Competencies*		
(2) e.g. USE, AND CARE FOR, TOOLS AND EQUIPMENT	Select and use wrenches	Select and use screwdrivers	*etc.*

Feature 2. Statement of criteria for each competency

44. The DACUM method uses a unique rating scale, which combines supervision and leadership with speed and accuracy. (The RVQ definitions also relate performance to supervision.) It is shown in detail in Appendix 2, but in essence it allows each competency to be graded at one of seven levels; this allows different, but specific, levels of achievement to be laid down as criteria for various job gradings in a given area of work.

45. Finch and Crunkilton (1979) believe that DACUM has been successful because it involves people with expert knowledge of the occupation (job incumbents and/or their immediate supervisors), it is systematic, its development cost is relatively low, and it can be conducted within a short time.

3. A CASE STUDY IN CBVE

Background

46. During 1983, the Department of Catering Services at Burton upon Trent Technical College decided that a review of its courses was needed for the following reasons:

- Nationally there was a considerable shortfall in the number of technically qualified people graduating from education/training establishments; additionally there are over 60,000 people employed in the catering industry who have not received any formal education/ training in catering (Fuller, 1983).
- There were limitations in the further education provision, including a relatively inflexible 36 week year, a rigid system of timetabling courses, no credit awarded for previous knowledge (unless a whole course had been completed), no credit for any in-house training achievements, insufficient liaison on course content with the employers, and a lack of transferability among education establishments.
- Employers of FE graduates and students were not sufficiently aware of the competencies which had been attained.
- There was an industry-wide recognition that there should be a move away from a time-served education/training model to a competency-based model (as expressed by Fuller (1983) in the committee report to the Hotel and Catering Industry Training Board).
- Locally there were numbers of prospective students who did not want to take a full course (the option most readily available), but who wanted to gain only a small number of specific competencies.
- In the local part-time course, there was wide variation in the prior and current experience of students, and a teaching/learning method was desired which took into account such individual needs.

47. It was decided to devise a competency-based system of food production education which would be flexible both in context and length, and would include:

— an accurate and comprehensive description of all the competencies involved in commercial food service;
— the ability to give credit for competencies already learned;
— the ability to give credit for competencies learned both on and off the job;
— an accurately described level of achievement for any defined competency;
— the concept of career-long progression in food service education;
— the ability to offer 'roll-on/roll-off' type courses unrestricted by conventional educational year constraints.

48. On the basis of these criteria, Burton upon Trent Technical College adapted a set of materials produced in Canada. The details of the adaptation are described below.

49. The aims of the case study were to test the effectiveness of the adapted materials, and the effectiveness of the features of the CBVE model as used in Burton upon Trent Technical College in 1984/85. The project was funded in part by the Further Education Unit. The aims were:

> To examine the appropriateness of adapting a competence-based learning package and profiling system (DACUM) for the retraining of adults who wish to enhance and improve existing skills. The project would:
>
> i) investigate the feasibility of DACUM becoming a nationally accepted system for the planning and assessment of training requirements;
> ii) evaluate how self-paced student learning and progressive skill development in a 'roll-on/roll-off' situation can be recorded and related to existing craft awards in cookery and allied subjects;
> iii) identify the acceptability of a student skill profile/passport to employers, and its validity and currency in terms of further accreditation and progression;
> iv) test the suitability of teaching materials and make recommendations for further development of 'packages'.

Details of materials purchased

50. Two sets of materials were obtained from Canadian sources.

(a) *DACUM profile*
The Food Preparation DACUM chart was developed by the Canadian Federation Chefs de Cuisine. There are 353 competencies grouped into 12 General Areas of Competence. The competencies within a General Area of Competence are arranged horizontally in ascending order of complexity from the left to the right of the chart. Extracts from the adapted version of the DACUM profile are provided in Appendix 2. The seven assessment criteria (as used generally for DACUM) were applied to certain catering occupations, such as chef de cuisine, executive head chef, and vegetable chef. (Such job descriptions thus consist of a subset of competencies, each competency being rated on a scale combining supervision and leadership with speed and accuracy.)

(b) *Learning materials* (Delivery system)
The learning materials were developed as the Hospitality Resources Project by the George Brown College of Applied Arts and Technology, Toronto, Ontario, Canada (sponsored by the Industrial Training Branch, Province of Ontario, and Canada Employment and Immigration Commission in co-operation

with the Colleges of Applied Arts and Technology). They were apparently prepared *independently* of the DACUM profile described above. The learning materials consisted of two integrated components:

— A set of 174 written 'work books', self-instruction material which cover all the competency profile boxes in a standard text format. The books contain:
  - a statement of aims and objectives;
  - additional reading or study references;
  - a cumulative course glossary of terminology;
  - a pre-test;
  - theoretical and practical instruction modules;
  - a post-test;
  - a self-assessment record.

— A set of 254 high quality microfiches, each of which consisted of up to 70 pictures on a postcard sized photographic film, which require a viewer to magnify them up to a readable size. The microfiches are referred to in the work-books to provide visual reinforcement of the texts. They are in colour, have step-by-step instructions concerning food preparation, and can be used in the kitchen. All work books have supporting microfiches.

Adaptation of overseas materials

DACUM profile

51. The occupational analysis data of the DACUM profile were *not* adapted; it was considered that the duties of specific food preparation staff (e.g. vegetable chef) are the same throughout the Western World. (There are variations, however, depending on the size of the organisation, and the equipment used.) One minor wording change was made.

52. The profile was, however, adapted to CGLI requirements. The overseas version did not specify *commis chef* (equivalent to City and Guilds 706/1) or *demi-chef* (equivalent to City and Guilds 706/2); a working group of full-time and part-time lecturing staff (which included persons working in industry) determined (by discussion only) the subset of competencies and their individual ratings for each of these two CGLI categories. Extracts from these profiles are contained in Appendix 2.

Learning materials

53. The workbooks were originally written in the idiom, and using the commodities, associated with the North American market but the processes used are universal to the culinary art. The work books have been adapted in three ways:

- the wording has been changed from American usage to British usage;
- the section on butchery has been extensively revised since different techniques are used in North America and Britain;
- the section on game has been extensively revised, since different game is available in North America and Britain.

No changes were made in the format and teaching/learning methods of the workbooks and no changes were made to the set of microfiches.

Final set of materials, and their use

DACUM profile

54. Key elements of the final DACUM profile are presented in Appendix 2. The profile acts as a recording instrument for the rating levels achieved by the learner; these were written on a chart for each student as they were acquired, so providing a visual record of progress.

Learning materials

55. These consisted of work-books, as described above; microfiches, as described above, and cross-reference materials.

56. Because the DACUM profile and the learning materials were produced independently, there was no direct correspondence between a competency and the related learning materials. The following materials were produced by Burton upon Trent Technical College to overcome this problem:

- Catalogues identifying the competency profiles in an estimated thirty-six hour unit, which are used by the tutor to ensure that all the material required is available, and also by the student to plan his or her scheme of work in order to achieve the desired results. This catalogue lists the learning material that is available to the student for the competency profiles included in a 'unit'. It lists the number and section of the work book, the number and frame of the microfiche and, where appropriate, the additional reading material from other sources (e.g. Practical Cookery or The Repertoire).
- A 'Skillfinder' computer printout which enables a tutor to identify the teaching material for any competency quickly and accurately. This is primarily a tutor document, but is at times used by open access students in planning their own specific courses.

Assessment materials

57. These were produced by Burton upon Trent Technical College for both theoretical and practical competencies.

Documentation for administration and certification

58. The documentation of the system is in three parts:

— A series of standard forms which assist a student in finding his/her way along a chosen path of achievement, and in maintaining critical self-appraisal.
— A series of standard forms which assist a trainer or lecturer to assess a student's requirements, providing a detailed reference to the teaching material, and assessing the results of tests.
— Documents to certify the results a student has achieved.

This documentation was produced by Burton upon Trent Technical College.

The pilot: course, students, and lecturers

59. The *course* used in the pilot was 1984/1985 City and Guilds 706/2, i.e. the second phase of the day-release course in Cookery. City and Guilds 706/2 normally is covered in two years' attendance by day-release.

60. The 15 *students* had all completed the first-year day-release course in basic cooking (City and Guilds 706/1). The students were typical of those undertaking the course, consisting of:

- seven males and eight females
- four students over 30, the remainder being primarily 17-21 years old
- all students were employed, one at an old people's home, one at a butcher's, one in an industrial environment, two at schools, and the remainder at restaurants and hotels.

61. Three *lecturers* were involved in this CBVE teaching/learning programme (two males, one female). One had just started teaching. One had been involved in producing the DACUM profile for cookery in Canada, but had not been personally involved in instruction in a CBVE programme; he was given an allocation of 10 hours per week to assist in implementing the CBVE programme. There was no formal training programme for these lecturers; they prepared themselves by studying the DACUM chart and the learning materials, and cross-referencing them. Once the pilot began, there were monthly meetings to discuss the operation of the scheme and to make improvements; in addition, there were four project steering committee meetings.

The pilot: discussions with employers

62. Before the pilot study was implemented, it was discussed with each employer by a college member visiting the employer's establishment. During the year the pilot was in operation, each employer was invited to the college on at least three occasions.

The pilot: the extent to which CBVE features were implemented

63. *1. Determination of competencies in an occupational area*

Yes — although the competencies were determined in Canada.

2. DACUM profile

Yes — as discussed in paragraph 50a.

3. Statement of criteria for each competency

Yes — based on CGLI 706/2, as discussed in paragraph 52, using the DACUM set of ratings.

4. Selection of competencies for a specific program

Yes — based on CGLI 706/2, as discussed in paragraph 53.

5. Integration of theory and practice

Partially — there was a large amount of integration embedded in the learning materials.

However, the learning materials (and DACUM profile) did *not* include all of the *Health, Safety and Hygiene,* and *Nutrition and Science* included in the City and Guilds syllabus; examples of omissions include food poisoning, structure and composition of foodstuffs, biological value of nutrients, proteins, and acidity, alkalinity and pH. To overcome this problem (since the course was specifically oriented to the City and Guilds 706/2 examinations), a separate subject *Nutrition and Food Chemistry* was maintained, and taught in the traditional manner.

6. Focus on transfer (application)

Yes — to assist in seeking transfer from college to workplace, on-the-job testing of the attainment of competencies by employers was encouraged; and when testing the attainment of competencies within the college, the situations were made as occupationally realistic as possible.

7. Alternative attendance patterns

To some extent — students were able to select two sessions out of morning, afternoon and evening sessions. If desired, these sessions could generally be changed.

8. Open-entry open-exit arrangements

Open-entry: *no* — all students commenced at the same time.

Open-exit: *to some extent* — students were able to sit for City and Guilds exams

when they were adequately prepared. Such exams are held three times a year.

9. Focus on competencies

Yes — apart from 'Food Science' subject as mentioned above.

10. Students given list of competencies (and criteria)

Yes

11. Mastery learning methods

Yes — for movement across a horizontal sequence, mastery of an earlier competency was required. Any competency not attained at first attempt was required to be re-tested until competency was attained.

12. Self-paced learning

Yes — apart from 'Food Science' subject.

13. Immediate and comprehensive feedback to students

Yes

14. Students given assistance in 'learning to learn'

Limited (As will be discussed later, the move from traditional teaching in CGLI 706/1 to CBVE in CGLI 706/2 was too abrupt.)

15. Students encouraged to accept responsibility for learning

Yes

16. Learning Activity Packages available, tied to specific competencies
Yes — although in the design stage the materials were not tied to specific competencies.

17. Alternative media available

No

18. Criterion-referenced post-tests

Yes — assessments were either undertaken in the college or on the job.

19. Results shown as competencies attained

Yes

20. Criterion-referenced pre-tests

Yes — if students demonstrated they had mastered a specific competency, there was no need to work on it in the college.

21. Maintenance of record system

Yes

22. Staff act as facilitators of learning

Yes — however, staff development was limited (see paragraph 61 above).

Other details of implementation

64. It was found vital to set one room aside as a resource centre dedicated to the CBVE approach. The learning booklets, microfiches, reference books, and other materials were thus permanently available in one location, and students could use the materials at times suitable to them, provided a lecturer was present and there was space available in the resource centre.

4. RESULTS FROM THE CASE STUDY

Student reaction and performance

65. The reaction of the students to the CBVE approach was obtained by informal discussions with students and by a brief formal questionnaire (Appendix 4) which was given to the students a few months after the course started. The initial reaction was one of great apprehension and resistance. The older students were especially apprehensive. This was despite much 'reiteration' of the effectiveness of the approach. The students were used to the traditional approach of teacher presentation, and found it difficult to:

- motivate themselves to work effectively through the learning materials, and to organise their studies;
- pace themselves appropriately;
- understand the cross-referencing of the profile to the learning materials;
- understand the learning materials;
- select the most important points from the learning materials.

66. Problems arose from the materials, and from the self-pacing student responsibility nature of the approach. (It was probably the desire of the learners to assign responsibility to the tutor to force them to learn, rather than accept responsibility for their own learning.) During this period, students who were average achievers expressed a desire for a formal exposition style of tutor-centred learning. After this initial period of uncertainty, these students progressed quickly with adequate support.

67. Lower achieving students, who would have been hard to teach using a traditional approach, were hard to teach using this new approach for a considerable period. Such students tended to become disruptive. With appropriate counselling, these students (who in the main had been poor achievers throughout their lives) found that the instantly demonstrable successes they gained using the work books, and the relevance of the practical work that they could plan for themselves, provided a spur for their efforts, and they eventually achieved adequate results.

68. By the time the students had completed the questionnaire, they were responding more positively to the new approach; however, a majority still disliked it (Appendix 4). The reasons for the dislike relate to the perceived difficulty in selecting the most important points for study, and to the self-pacing feature. The students found the materials easy to read, but almost half found them 'not so easily understood' or 'difficult to understand'. Most students indicated that they understood the referencing method. One-third of the students

stated they were not satisfied with their speed of progression through the course.

69. By the end of the first year, the lecturers felt that the students were generally happy with the approach. The mature students, three of whom finished the programme after one year, were perceived as 'very happy' with the approach.

70. Of the fifteen students who commenced, three left early on in the course: one changed employment and left the course, the second attended for three weeks only, and the third developed a chronic skin allergy and left the catering industry. All other students completed the course. This drop-out rate is similar to that of previous years.

71. *All twelve* students who sat the City and Guilds examinations passed them at their first attempt. This pass rate is much better than previous years, which traditionally have had a pass rate of 50-65%. In addition, three students completed the programme (which traditionally has taken two years) *in only one year.* Two of these students, both mature, gained distinctions.

72. In terms of student performance, the results are thus very positive, especially with respect to the pass rate and the use of the self-paced feature to complete the course in less than the traditional time. Obviously, care needs to be taken in generalising from this result, due to the low number of students, and to the possibility that the results are associated with the experimental nature of the case study (the so-called Hawthorne Effect).

Tutor reaction

73. The tutors found it difficult to move from the traditional 'chalk-and-talk' approach to the CBVE approach used by Burton upon Trent Technical College. It was perceived that tutors with many years of experience in the traditional approach found it harder to change their teaching style than did tutors with less teaching experience.

74. It was quickly realised that the new approach was *not* a soft option. With students covering a broader spectrum of topics in a session, tutors had to be able to switch quickly from topic to topic. There was also stress in determining priorities when confronted with numbers of students, all with problems. However, the whole team was in agreement within six weeks of the commencement of the new CBVE approach that it was a good system and that it would work. The tutors have all adapted well to the new approach.

Employer reaction

75. The reactions of employers were based on a questionnaire, and on dis-

cussions held with employers during visits by college staff to the workplaces of students. The employers felt that the CBVE approach was of greater benefit to their employees than the traditional college approach, as:

- it allowed students to complete the course in less than the traditional two years;
- it could utilise assessment from the workplace;
- it focused on competencies required on the job;
- it allowed greater flexibility in attendance arrangements, for example, if someone was sick and the student was required to work on the day college was normally attended, the student could easily go to college on another day;
- students could practise competencies at the workplace;
- assessing and reporting by competency was more precise than a traditional grade covering many competencies;
- it tended to encourage more employer participation in training with the college, leading to more employee training than was previously offered;
- it tended to integrate the college and the on-the-job training.

76. The employers also felt that the CBVE system developed by Burton upon Trent Technical College assisted in the career progression of people in the catering industry. In addition to the traditional food preparation competencies, there are competencies relating to planning, organising, and administrating. The system assists in the planning and monitoring of career training, the compilation of job descriptions, the comparision of competencies attained by applicants for a particular job, and the organisation of a pre-determined course of study in different locations.

Results with respect to CBVE features in the pilot study and to changes in subsequent years

77. Perhaps the most important outcomes of the pilot CBVE scheme were the decisions to amend its operation, to continue it for City and Guilds 706/2, and to extend it to City and Guilds 706/1 and YTS in the 1985/86 year with 121 students (and subsequently into the 1986/87 year with some 130 students). The decisions to convert all catering day-release courses to a CBVE approach and to offer open access for adults to follow specific student-devised programmes using the CBVE approach, and the perceived successful implementation of these decisions, speak highly for the effectiveness of this approach if adequate planning is undertaken.

78. The following chart gives the results of the pilot study, and the changes made subsequently, with respect to each CBVE feature identified above.

	Feature	*Perceived Results of Pilot Study*	*Subsequent changes*
1.	Determination of competencies in an occupational area.	Satisfactory.	—
1a.	Profile of competencies.	Satisfactory. (See also paragraph 52) Found to be very useful for employers.	—
2.	Statement of criteria for each competency.	Employers were happy with grading system, since more specific than previous grading of whole subjects, and system highlighted areas where students had attained high levels of competence (e.g. some grades of 4 were given). It was found that the approach allowed levels 5 and 6 to be awarded for specific competencies by employers for on-the-job performance.	—
3.	Selection of competencies for a specific programme.	Satisfactory.	Open access students select own competencies (in consultation with staff).
4.	Integration of theory and practice.	Satisfactory.	—
5.	Focus on transfer.	Satisfactory.	—
6.	Alternative attendance patterns.	Satisfactory.	The range of options has been greatly extended, to 14 sessions over three days. Students can choose any number of sessions;

			they can undertake programs of from one hour/week to 12 hour/week. A choice can be later varied. The above does *not* apply to YTS (seven hours on one day).
7.	Open-entry open-exit arrangements.	The open-exit arrangements worked well, with some students finishing in half the usual time (paragraph 71).	Students can now enrol at any time during the year.
8.	Focus on competencies.	Satisfactory.	—
9.	Students given list of competencies.	Satisfactory.	—
10.	Mastery learning methods.	Satisfactory — after students became used to method.	—
11.	Self-paced learning.	Many problems initially. As mature students realised that they could complete programme in one year, they speeded up; they tended to drag the rest of the class with them. Much verbal encourangement had to be given. (Two of the mature students had a financial incentive — a rise in salary as soon as the course was completed.)	Guidance provided by grouping learning into units — each consisting of about 36 hours learning; students are encouraged to finish in less than the 36 hours.
12.	Immediate and comprehensive feedback.	Satisfactory.	—

Feature	*Perceived Results of Pilot Study*	*Subsequent changes*
13. Students given assistance in learning to learn.	Not very satisfactory, as indicated in paragraphs 65-68.	Apparently overcome by: • more materials on cross-referencing • more structuring of learning materials (into 'units') • a 14-page pamphlet which discusses the CBVE approach, relates the CGLI syllabus to the DACUM profile, and provides study guidelines. • lecturers commencing teaching using the traditional approach, and gradually assisting students to adopt the CBVE approach; such a procedure may take up to eight weeks (on one day a week), and is especially necessary for YTS groups • in open-entry groups, existing students tend to assist new students in learning to cope with the new learning approach.
14. Students encouraged to accept	Students initially seemed unwilling to accept responsibility.	See 13 above. The time taken by students to accept

responsibility for learning.		responsibility varies from student to student, but in the main has become shorter as the tutors have become more proficient in their counselling and tutorial competencies.
15. Learning Activity Packages available.	There have been some problems of access. Some students have had problems in: • understanding the materials • selecting the most important points (As indicated above, all students had some problems on commencing use of the Learning Activity Packages.)	—
17. Criterion-referenced post-tests.	Satisfactory.	—
18. Results as competencies attained.	Satisfactory.	—
19. Criterion-referenced pre-tests.	Satisfactory.	—
20. Record system.	Too cumbersome.	Continuing efforts to streamline.
21. Staff development	Inadequate staff development. (See paragraphs 73 and 74.)	The six tutors on the 1986 CBVE programmes are all effective.

5. A NATIONAL PERSPECTIVE

Results reviewed with respect to the aims of the FEU Project (RP190)

79. *Useful study can be made of the feasibility of the 'Burton upon Trent CBVE approach' becoming a nationally accepted system for the planning and assessment of training requirements.* The discussion centres on four agencies: the catering industry, certification agencies, educational agencies, and training agencies.

The catering industry

80. At the local level, the reaction was positive (paragraph 75). Providing there was effective implementation (with respect to tutors, resources, and students), there was no evidence to suggest that the approach could not be used nationally.

Certification agencies

81. The principal certification agency for catering is the City and Guilds of London Institute. This body is moving towards the specification of competencies as the basis for its examinations in catering; however, it does not specify a teaching approach. The Burton upon Trent Technical College CBVE approach is completely consistent with the CGLI use of competencies. (This proposition holds for either dish-based (e.g. fish, chicken) or process-based (e.g. bake, fry) competency statements.)

Educational agencies

82. From the standpoint of educational institutions, a CBVE approach represents a very radical change from traditional teaching and assessment methods, as can be seen from Appendix 1.

83. From experience to date, it would seem that a major factor limiting the spread of CBVE in catering is the cost to the institution of purchasing the learning materials and setting up a resource centre.

Training agencies

84. There would seem to be no reason to prevent a CBVE approach such as that operated by Burton upon Trent Technical College from meeting the expectations of such bodies as the Hotel and Catering Industry Training Board and the Manpower Services Commission.

85. *The project set out to evaluate how self-paced student learning and progressive skill development in a roll-on/roll-off situation can be recorded and related to existing craft awards in cookery and allied subjects.* In order to achieve this aim and also the later aim in part (iv) of the project, it was necessary to run a pilot programme.

86. The original intention was to form a study group using CBVE, and a control group using conventional methods. This was impossible since there were insufficient students to make two viable groups for the selected programmes. It was therefore decided to measure the pilot group against the documented progress of a previous year's course which had been conventionally taught. In the event this was difficult to achieve with any precision.

87. The original planning for the pilot necessitated assessing the competency ratings for a student qualified to 706/1 standard which has been referred to in Appendix 2. To reach this position each competency listed on the DACUM chart was examined by food production tutors and a competency grading allocated. These grades can be seen on the chart (Appendix 2) inside the bottom left hand corner of the competency profile boxes. Where no number is inserted, it may be assumed that the operator will not necessarily have any useful commercial knowledge of that competency. The same exercise was undertaken for a student who has achieved the grade of 706/2, and this was entered below the square in the centre on the same chart (Appendix 2). In addition, the corelation with the City and Guilds syllabus pamphlet was produced in a booklet form for easy student reference.

88. By comparing the competency profiles of each certificate, it was a simple matter to highlight new competencies that are required and existing competencies that need enhancing in order for a student to progress from 706/1 to 706/2 standard. The ratings were shown to and discussed with local employers, and also the college City and Guilds assessor. The final accepted gradings reflect the outcome of these discussions.

89. The pilot related specificially to City and Guilds certification, with a common starting point and a common starting time. The flexibility built into the course initially was the duration. It was explained to the students on their induction that by application and diligent study, it would in some cases be possible to complete the programme in one year (half the normal time).

90. From September 1985, the CBVE approach has been used to offer a truly flexible roll-on, roll-off approach to catering education. Students are now able to enrol on a programme of instruction at any time, and to attend college at times best suited to them. The programme can be devised either to enable the student to cover the full City and Guilds syllabus, or, to suit the student's or the employer's requirements. In the latter case, the competencies required and the time involved are negotiated with the tutor as an initial estimate, but either may be extended if it is necessary so to do.

91. Certification of these self-devised programmes is undertaken in the standard

manner to enable a student to be credited with competencies that may be carried forward at a later date, should a full City and Guilds Certificate be required.

92. The assessment of the competencies gained is the same for either City and Guilds syllabus or self-devised programme; the competencies are tested either at the behest of the student or when, by observation, the tutor is satisfied that the work produced is of the required standard. A competency test is usually designed around a cooking process, e.g., braising, or around a particular recipe which requires that cooking process, e.g. braised beef jardiniere. Such a competency test will usually be used to test a number of related skills, e.g. selection of ingredients, care and maintenance of equipment, temperatures and timing, sealing, garnishing, and safety aspects. Once these are mastered to the required degree of competence, they would be recorded and subsequently not require further assessment.

93. The assessment of practical competencies when using a CBVE approach is not confined to the college; employers of the students involved in the pilot programme were encouraged to conduct assessment exercises on the job should it be appropriate. The results of these assessments were then reported to the tutor and credited in the same way as those assessed in college. In the pilot scheme, approximately one quarter of the competency assessments were made in this way, and by randomly retesting a proportion of them it was possible to judge the validity of the employers' grading. It has not been found necessary to regrade any such results.

94. Assessments of theoretical knowledge are conducted in a conventional manner using the usual variety of testing methods, and normally when a student has completed a 'unit' of a pre-agreed number of theory work books. In most cases there is no individual competency profile box to which a theory module relates; the theory modules relate to a complete General Area of Competence (GAC) and are fully integrated into the competencies that are being learned. The results of theory tests are used to back up the results of practical assessments and are incorporated into the overall grading.

95. The recording of competency assessment is done initially on a proforma in the tutor's record book. It may be necessary to complete a series of tests in order to grade a complete competency profile box. Once this has been done, the tutor will transfer the grading to the student's DACUM charts and issue a certificate showing how the grading was achieved in greater detail.

96. The chart and certificate then become the student's record of progress. It will be seen that, using this system, it is possible to log the progress of a number of students all at differing levels of competence, at differing stages of a pro-

gramme, with differing attendance patterns, and on completely different study programmes.

97. The only inhibiting factors in the total flexibility of the system are student motivation, the tutors' ability to cope with multi-skill workshops, and the physical resources of the establishment.

98. *The acceptability of a student competency profile/passport to employers, and its validity and currency in terms of further accreditation and progression is also worthy of study.*

99. The existing profiling of students' competencies is a broad brush picture measured against a relatively vague description of the competencies required (The City and Guilds Syllabus), graded overall as poor (fail), average (pass), good (credit), and excellent (distinction). The fact that a particular student was very poor at meat cookery but excellent at pastrywork is not recorded, and no provision is made to do so. What 'fail', 'pass', 'credit', and 'distinction' mean is not defined.

100. By using a device such as the DACUM chart, and a set of comprehensive and well-defined assessment criteria, it is possible for a student/trainee to present to an employer a much more precise profile of his or her strengths and weaknesses.

101. The advantages of the DACUM chart as a tool for personnel managers were not lost on the members of the Hotel Sector Training Group; their criticism was that the chart itself was, on initial inspection, too complex. It was suggested that relevant extractions could be made to reduce the physical size of the chart, making it easier to read. Whilst agreeing to some extent with this opinion, it will also be necessary for a kitchen worker to have a complete chart as it is a career-long record of progress. The College is now in the process of preparing specific charts, one of which is for the first year of YTS, now Training for Skills (TFS). If universal acceptance of the standard chart could be achieved, it would be possible for an interviewing personnel manager to prepare an acetate overlay highlighting the skills required. This could be accomplished in advance of the interview and would greatly facilitate the interpretation of the full DACUM chart.

102. The local employers who were questioned on their acceptance of the chart were initially of the same opinion as the Hotel Sector Training Group — 'too complex'. However, those that took the trouble to study the document more closely and who gave the college staff the time to give detailed comments soon agreed that the chart was a valuable aid to training organisation and evaluation. Four of the eleven employers with students on the pilot scheme had copies of the chart on the head chefs' office wall, using them, as was intended, to assist

in the monitoring of a trainee's progression along a pre-agreed route. Others of the students who were already in positions of responsibility used the charts to record their own competencies which previously they had not recognised as being achieved.

103. It has been recognised at the College that, on a craft course up to City and Guilds 706/2, it is unlikely that a student would be graded above DACUM competence level 3. The higher gradings, particularly levels 5 and 6, could normally only be assessed on the job.

104. By using a build-up method of recording gradings on the chart, it is possible for a kitchen worker to have a document that not only represents current competencies, but one that can also be used to record upgradings without having to issue a new chart.

105. Not one employer has suggested that the DACUM chart could be anything but a considerable improvement on the present system of conveying the competencies of an employee, and that if widely used would greatly assist in the recruitment of the correct grade of staff. The Hotel Sector Training Group also recognised the advantages of using the DACUM profile to draw up job descriptions.

106. *The participants were able to test the suitability of teaching materials, and make recommendations for further development of packages.* As discussed earlier (paragraphs 65-77 and 77-8), the students generally found the materials suitable after reasonable exposure to them. However, there was extreme dislike of the materials in the early stages of the pilot. As pointed out in paragraphs 77-8, a number of changes were made during the pilot programme and subsequent to it. Further work could be undertaken to:

- provide further guidance early in the programme in the learning materials used;
- recast the DACUM profile and the learning materials so that there is a one-to-one correspondence between them. This would be a major exercise, but could be integrated with a new CGLI syllabus and with the 'Caterbase' project (Appendix 6).

107. In addition, there appears to be a need to improve the learning effectiveness of the materials, by:

- making them more easily understood
- highlighting major points more clearly

The data suggest that such learning materials can be effectively used for catering education.

Conclusion

108. Generally, it would seem that a CBVE approach can be used successfully in many vocational courses, providing it is effectively implemented. Such an implementation includes the adequate preparation and commitment of the tutors, the provision of adequate resources, and the provision of an adequate transition period with effective tutoring for the movement of learners from a traditional approach to a CBVE approach. Such a result is consistent with other studies (e.g. Harris, 1985).

109. A CBVE approach would seem to be especially useful for people who want to attain a small number of specified competencies, and for groups which are heterogeneous with respect to student characteristics, previous industrial experience, and current industrial experience. Its utility for homogeneous students in the same full-time course requires analysis.

110. If a CBVE approach is to be adopted, it is probably appropriate to specify clearly the objectives and the perceived advantages and disadvantages of such an adoption, and then determine which specific CBVE features to include. To evaluate a CBVE approach, it is probably appropriate to analyse it in terms of specific CBVE features rather than an all-or-none approach. Each feature needs to be analysed with respect to its specific merits.

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APPENDIX 1: DEVELOPING THE CONCEPT OF COMPETENCY-BASED PROGRAMMES

1. A competency- or performance-based system seeks to define objectively the skills, knowledge and attitudes that are necessary for a given range of activities (in this case a complete job profile); to list or display them in a logical manner; and to provide a method of assessing these competences. The emphasis must be on the mastery of specific skills in prespecified tasks for which agreed criteria of competence can be established.

2. The essential characteristics of such a system are:

i) The competences needed by food production operators are carefully identified, stated in behavioural terms and communicated to the student in advance.
ii) The criteria for measuring competence in food production tasks, conditions for assessment, and expected level of mastery are stated and shared with students in advance.
iii) The instructional programmes focus upon the development and evaluation of the stated competencies needed by the students.
iv) The assessment of the student's competency uses performance of food production tasks as the primary evidence, though knowledge can be taken into account.
v) Progress through the programme is determined by the demonstration of competence in food production tasks rather than by time or course completion.

3. Other characteristics that are desirable in order to achieve flexibility are:

— instruction/learning is individualised and personalised;
— the programme is systematic;
— the emphasis is on exit rather than entry requirements;
— instruction may be modularised;
— the student is to some extent held accountable for his or her performance.

4. The teaching of food and beverage production lends itself well to the performance/competency based system. In devising the skills in the task analysis it is important that the pitfalls are recognised and avoided, these were identified in the FEU document *Developing Social and Life Skills* (January 1980) many of which are applicable to practical programmes.

i) Too many things may be described as if they were simply skills (mislabelling).

ii) An analysis of limited tasks may result in a limited curriculum, which may not fit students for the industry's current needs.
iii) Since skill requirements change as tasks change, there may be a danger of outdated skills being taught in such a way that adaptability is inhibited.
iv) The need for repeated practice may not be adequately allowed for, either at the workplace, or in college.

5. The same document then lists the advantages of such a system as:

— 'skill acquisition' is attractive to employers and young people because of the possibility of quick results and immediate success;
— personal development (e.g. confidence) can come through acquisition of demonstrable abilities;
— relevance is easily demonstrated;
— competence is readily assessable, by tutors, employers and learners;
— the active rather than passive approach may suit many students' learning styles;
— transferability can be encouraged by identification of generic skills and by the fact that students have learned them.

A comparative analysis with existing methods and course structures

6. Much has been written concerning the relative merits or otherwise of competency- or performance-based education, probably the most quoted (and often misquoted) is a paper by C E Johnson on the subject published in 1974 in *Journal of Teacher Education.* Johnson was in fact referring to the education of teachers in the paper, but his comparisons are valid for the most part when applied to the teaching of craft subjects in catering. Johnson's comparisons were as follows:

Competency-based education	*Traditional education*
1 The main indicator of student achievement is to do the job effectively.	The main indicators of student achievement are knowledge of the subject and ability to do the job effectively and efficiently.
2 Once a student has demonstrated ability to do the job, his or her preparation is complete. Time is not a factor. Some students finish later, others early.	Students operate within specific time limits, such as academic years semesters, or terms. Class hour requirements are generally adhered to.

3 The criterion of success is demonstration of ability to do the job. Mastery criteria are used to determine how well students perform. These criteria must be met for students to be considered competent.	The criteria of success are letter or number grades which indicate the extent to which the student knows the required subject.
4 Entrance requirements are not of paramount concern. Students start where they are. If they are not ready, they are helped to become so.	Entrance requirements are important concerns. Students who are not ready cannot be admitted.
5 Flexible scheduling of learning activities is essential to provide for individual differences among students. This allows for year round educational opportunities and numerous possible times for enrolment.	Students are scheduled for instruction into fairly rigid blocks of time. The academic year and infrequent mass registration are standard practices.
6 There are no fixed rules as to how, where and when learning is to be accomplished.	On-campus classroom teaching is the most common approach to instruction. Required on-campus attendance is standard practice.
7 Opportunities are provided to acquire competences in the field or on-the-job experiences.	Practical field experiences are limited.
8 'Learnings' (competences) are presented in small learning units or modules, combinations of which are designed to help students acquire full competence.	'Learnings' (subject matter) are organised into courses representing academic time units.

9 Provision is made for differences among students in their styles of learning by providing them with various alternate paths for acquiring competence.	Lecture-discussion is the most common mode of presentation, supplemented by seminars, laboratory activities, and limited field experiences. Little attention is given to student style of learning.

7. The existing courses for food production are structured in accordance with the City and Guilds syllabus for 706/1, 706/2 and 706/3. This syllabus lays down the total hours of instruction required, and the subdivision of that time into teaching hours for the major subjects.

8. This apparently didactic statement of the time to be allocated to subjects would seem to preclude the provision of a competency-based programme, however City and Guilds has suggested that the hours quoted are 'merely a guide'. It is thus possible now to structure a course in such a way that time becomes less important than the ability to perform a particular task.

9. City and Guilds requires assessment of the practical elements of the course to be graded to show either pass or fail. No credit is given for a useful acquisition of skill or knowledge that requires further refinement before it can be performed unsupervised (or unaided). The nature of college-based training means that relatively few skills are performed in a sufficiently polished and expert manner to satisfy the very discerning restaurateur or hotelier. A competency-based system can give credit for skill acquired at a commercially useful level but not necessarily perfected.

Teaching/learning strategies

10. Having due regard to the characteristics of the system, it is necessary to revise the teaching/learning strategies that are normally used in this subject area which to date have usually been based on exposition backed by directed practical work.

11. A performance-based system will demand a more student-centred approach, particularly in the theoretical aspects of the programme.

12. Where student-centred learning is encouraged, the tutor's skill in counselling and channelling the students' energies into a logical and productive sequence of study will be a decisive factor in the success of the project. Eric Tuxworth stresses the importance of the tutor's role in his paper; he writes: 'It is important that the difference between "directed self instruction" and "independent self-instruction" be understood. Although some students use the

modules without recourse to the help of others, most use them with the advice of programme staff. Review of the objectives, the learning experiences and the assessment procedures, before and during the learning process is regarded as highly desirable for most students. Self-evaluation is also regarded as a valued goal or process.'

13. Tuxworth then continues: 'To highlight the need for tutorial advice in the process, a "Modules Dropper" is identified as a tutor who simply hands out modules without the necessary support for the process of learning. The programme leaders, in their training session, warn the various resource personnel against this perversion of the modular mode.'

14. The paper quoted is on the subject of teacher training. It is therefore of paramount importance that the tutorial back-up for students of lesser ability encourages self motivation, is enlightened, informed and sympathetic. Provided this tutorial dedication can be an inherent part of the programme it should prove acceptable to all parties.

15. Two radical differences between the performance-based system and the conventional is that in the first it will often be the student who decides on the most advantageous study route through a given part of the syllabus, guided by a tutor when required; and secondly, assessment (and re-assessment) will, for the most part be 'on demand' when a student feels confident in a successful outcome.

16. It is therefore seen to be a task of prime importance that tutors should prepare themselves to move away from the traditional methods of teaching that have for so long dominated craft education in all disciplines. Providing a performance-based programme will necessitate a profound and fundamental change in a lecturer's approach to the passing on of skills. It is by the acceptance of change in the tutor's role that the success or failure of the scheme will be decided.

APPENDIX 2:
A DACUM CHART FOR COOKERY FOR THE CATERING INDUSTRY

The full DACUM chart stretches across six joined A4 sheets and is, therefore, too large to be reproduced here. Instead, Figure 2 shows the 32 competencies that make up the competence, 'Prepare Vegetables and Fruit'. This is just one of twelve competences on the full chart and Figure 3 shows a section across all of them to give some idea of the range of requirements.

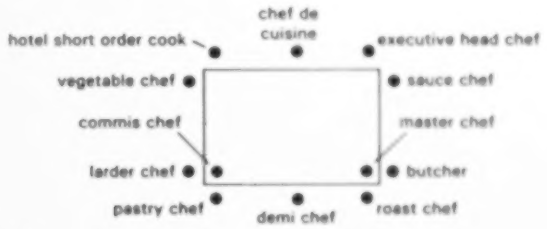
Figure 1

KEY

Each competency is graded on a scale 0–6, the box being marked according to level achieved as follows:

Level of achievement	grade	Marking on box
Cannot perform this task satisfactorily for participation in a work environment	0	
Can perform this task but *not* without constant supervision and some assistance	1	
Can perform this task satisfactorily but requires *periodic* supervision and/or assistance	2	
Can perform this task satisfactorily *without* assistance and/or supervision	3	
Can perform this task satisfactorily without supervision or assistance with *more than acceptable* speed and quality of work	4	
Can perform this task with more than acceptable speed and quality and with *initiative and adaptability* to special problem situations	5	
Can perform this task with more than acceptable speed and quality, with initiative and adaptability and *can lead others* in performing this task	6	

The numbers in and around the boxes on the chart represent, according to their position, the grade required to qualify for different posts in the kitchen. The key to this is as follows:

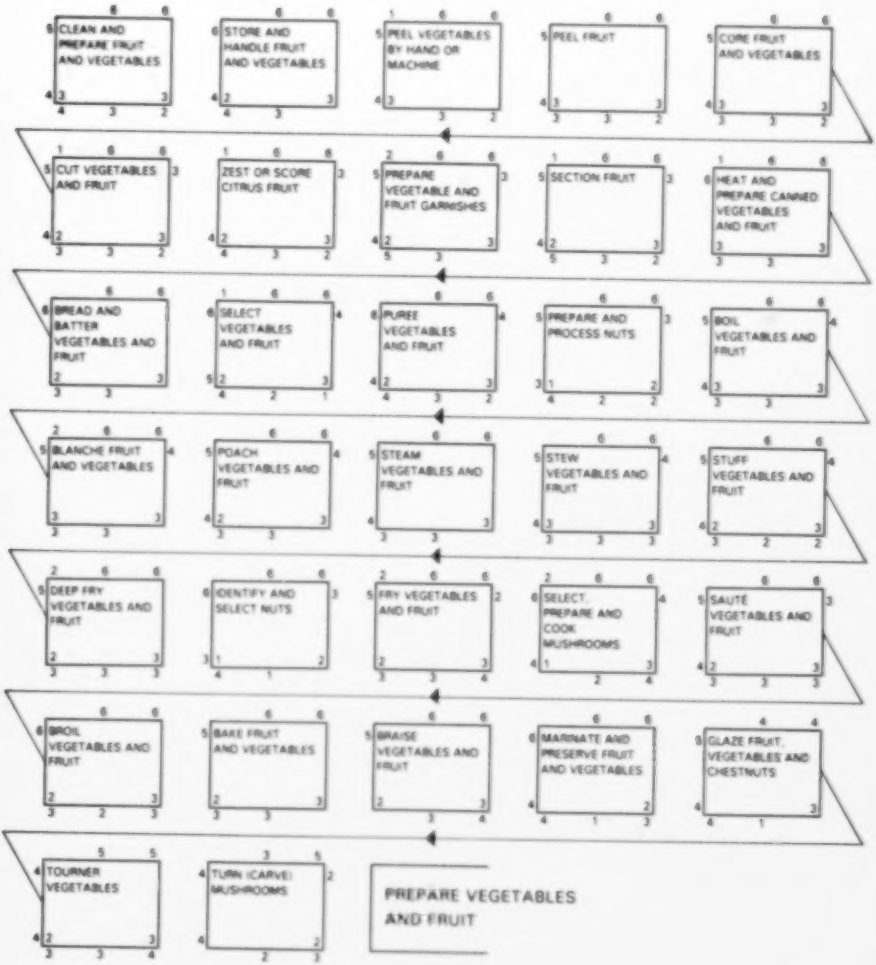


Craft definitions:

Executive head chef: A chef de cuisine with overall financial and managerial responsibility for the total operation of food production department.
Chef de cuisine: A master chef with the managerial responsibility for one large food production area.
Master chef: A master craftsman (C&G 706/3 standard) with supervisory responsibility in a limited size food production area.
Demi-chef: A craftsman cook (C&G 706/2 standard and above) working under limited supervision, e.g. a senior cook in this grade would be second chef in a small kitchen, first commis in a large section. Junior cooks of this grade would hold minor positions of responsibility commensurate with their knowledge and aptitude.
Commis chef: A junior cook (C&G 706/1 standard) working under close supervision.

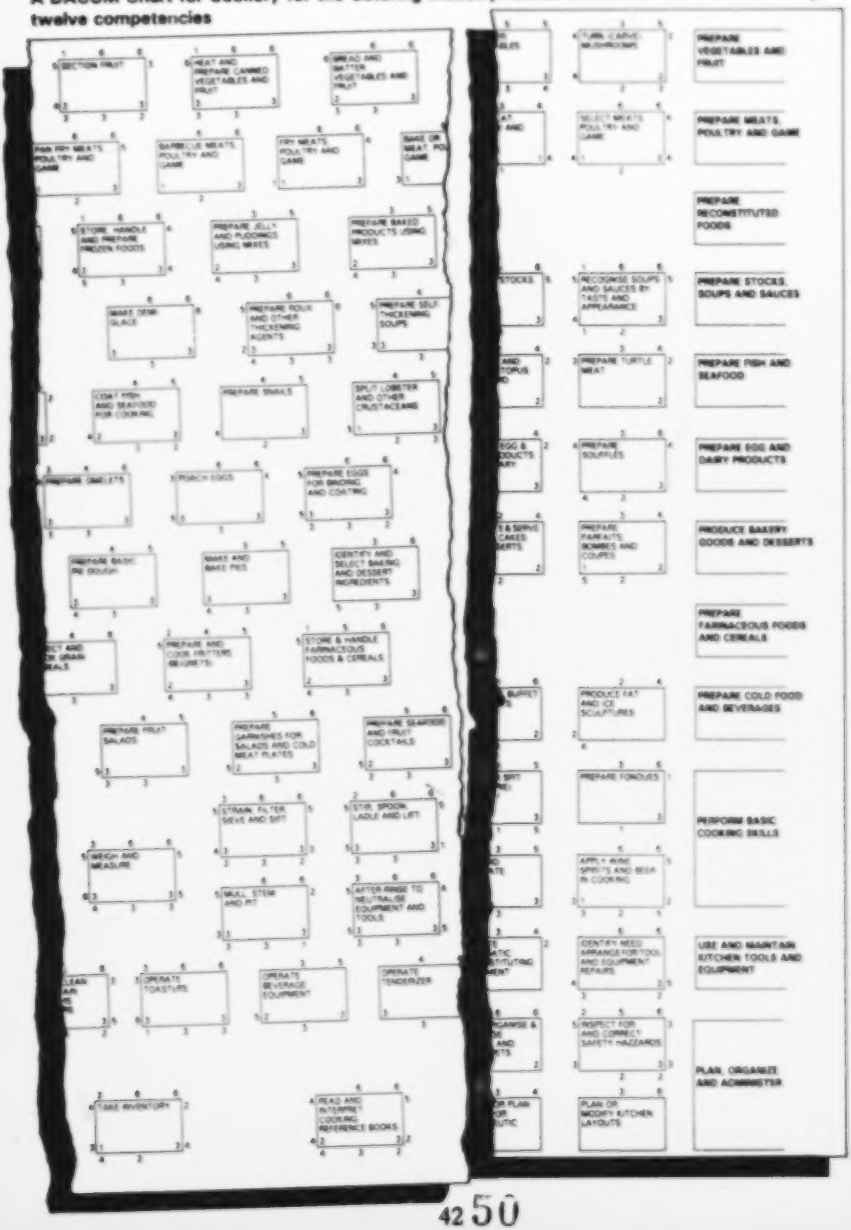
Figure 2

A DACUM Chart for Cookery for the Catering Industry: Prepare Vegetables and Fruit competence


CLEAN AND PREPARE FRUIT AND VEGETABLES
STORE AND HANDLE FRUIT AND VEGETABLES
PEEL VEGETABLES BY HAND OR MACHINE
PEEL FRUIT
CORE FRUIT AND VEGETABLES
CUT VEGETABLES AND FRUIT
ZEST OR SCORE CITRUS FRUIT
PREPARE VEGETABLE AND FRUIT GARNISHES
SECTION FRUIT
HEAT AND PREPARE CANNED VEGETABLES AND FRUIT
BREAD AND BATTER VEGETABLES AND FRUIT
SELECT VEGETABLES AND FRUIT
PUREE VEGETABLES AND FRUIT
PREPARE AND PROCESS NUTS
BOIL VEGETABLES AND FRUIT
BLANCHE FRUIT AND VEGETABLES
POACH VEGETABLES AND FRUIT
STEAM VEGETABLES AND FRUIT
STEW VEGETABLES AND FRUIT
STUFF VEGETABLES AND FRUIT
DEEP FRY VEGETABLES AND FRUIT
IDENTIFY AND SELECT NUTS
FRY VEGETABLES AND FRUIT
SELECT, PREPARE AND COOK MUSHROOMS
SAUTÉ VEGETABLES AND FRUIT
BROIL VEGETABLES AND FRUIT
BAKE FRUIT AND VEGETABLES
BRAISE VEGETABLES AND FRUIT
MARINATE AND PRESERVE FRUIT AND VEGETABLES
GLAZE FRUIT, VEGETABLES AND CHESTNUTS
TOURNER VEGETABLES
TURN (CARVE) MUSHROOMS
PREPARE VEGETABLES AND FRUIT

The competencies (one within each box) are in ascending order of complexity from top left of chart. When a student has successfully worked through all the competencies, then he or she has attained the competence 'prepare vegetables and fruit'. Varying achievement levels or skill ratings are required for different positions within the kitchen. See previous page for key.

Figure 3
A DACUM Chart for Cookery for the Catering Industry: Cross section of full chart including twelve competencies


PREPARE VEGETABLES AND FRUIT
PREPARE MEATS, POULTRY AND GAME
PREPARE RECONSTITUTED FOODS
PREPARE STOCKS, SOUPS AND SAUCES
PREPARE FISH AND SEAFOOD
PREPARE EGG AND DAIRY PRODUCTS
PRODUCE BAKERY GOODS AND DESSERTS
PREPARE FARINACEOUS FOODS AND CEREALS
PREPARE COLD FOOD AND BEVERAGES
PERFORM BASIC COOKING SKILLS
USE AND MAINTAIN KITCHEN TOOLS AND EQUIPMENT
PLAN, ORGANIZE AND ADMINISTER

APPENDIX 3:
IMPROVING LEARNING SKILLS OF CBVE STUDENTS

Notes to students

a) *How the Dacum chart works*

DACUM is a visual method of showing, on a chart, all the skills you will need to become a craftsperson, starting as a commis chef (e.g. 706/1), then a demi-chef (e.g. 706/2), all the way up to an executive head chef.

Each skill is shown in one of the Skill Profile (SP) boxes on the chart (e.g. Clean and prepare fruit and vegetables). The skills are grouped into rows (e.g. Prepare fruit and vegetables), with the simpler skills at the left-hand end of the chart and becoming more complex as they move towards the right-hand end. Each horizontal row (there are 12 rows of differing skills) has a number (e.g. 01) and each box is identified by a letter (e.g. A). So, for example, the skill 'Clean and prepare fruit and vegetables' will have a reference of 01A. [N.B. These references are not included in Appendix 2.]

At the right-hand end of the full chart is a skill rating chart [See Appendix 2, Figure 1]. This chart, starting at LEVEL 0 and moving up to LEVEL 6, describes the standard of skill you will need for any particular position in the kitchen (e.g. Prepare soufflés. LEVEL 2 for a demi-chef or 706/2 equivalent). This means that a demi-chef could perform this task satisfactorily but would require periodic supervision and/or assistance.

You will notice that these ratings (1 to 6) are positioned around each of the Skill Profile boxes in a position to identify a particular job title.

The skills you will need, and the level to which they are to be accomplished, will either be given to you or will be agreed upon (in the case of an Open Access student) between the tutor and yourself. The approximate time needed to complete the acquisition of the skill(s) will also be agreed upon.

The selection of all the Skill Profile boxes then becomes your study and work syllabus. They may relate directly to the City and Guilds syllabus if you plan to sit the C&G examinations.

b) *Study materials*

The study materials consist of: sets of study work books; related microfiche visual learning aids; recommended text books; selected articles and other

printed matter; and, where called for, more advanced cookery and theory books to be drawn from the college library.

The value of this learning method is that it allows *you* to progress at *your* own speed and within the time span you can allot to your studies. This method does not restrict you to the average speed of learning of any class or group of students. This, then, throws much of the responsibility for progress upon yourself. *You are your own pacemaker.*

Nevertheless, you are not alone. You have the full support of tutors who will be monitoring your progress and helping you in every way possible. Never delay in talking over a problem with your tutor or asking for guidance and help — it will be freely and happily given.

c) *Student instructions for the proper use of the skill profile study material*

1. Many students must use these study materials so please be considerate in the amount of time you spend using them to the exclusion of others.
2. Originals of study books and other supporting material must not be removed from the classroom.
3. Please make sure your hands are clean and free from grease before handling any study material.
4. Do not write on, or otherwise mark, any original study materials. The pre-tests and post-tests you answer must be photocopies.
5. If you need more time to study outside the classroom, request copies from tutors.
6. Plan your study time to complete a unit as outlined in your unit study guide; if you get behind schedule consult your tutor to negotiate a revised completion date.
7. Your unit study guide and cross-referencing sheets give you a comprehensive list of study material for each Skill Profile Box you are required to complete; the references run numerically from the left of your chart and alphabetically on the vertical axis.
8. Work carefully through the study books making sure you learn and understand each step. The theory modules have pre-tests and post-tests to help you assess yourself in your performance of the performance (practical) module.
9. The additional reading references that are given will give background information and will broaden your understanding of the subject matter in the Skill Profile Box.
10. Be honest with your self-appraisal and record your marks or grades.
11. When you feel confident that you have covered a complete Skill Profile Box, ask your tutor for a formal assessment. This will be marked on your Certificate of Competence.

12. It is to your advantage if you are able to complete a unit ahead of schedule as you will be able to progress on to more advanced units more quickly.
13. Having successfully completed a Skill Profile Box ask your tutor for further assessment should you feel you have achieved a higher level of competence than your original rating.
14. Keep all the study material you are given carefully and file all the course structure and assessment forms for future scrutiny and revision.
15. If you have any difficulty consult your tutor immediately; time spent on aimless study is usually wasted.

d) *Study guidelines*

1. Decide on your next dishes.
2. List the ingredients.
3. Draw up a scheme and order of work.
4. Read up on the main commodities; storage; selection; types; seasonal variations; French terms, etc.
5. Read up on the methods of cookery, equipment to be used, and any particular technique involved.
6. Consider the nutritional values of the food produced: does the dish contain protein, carbohydrates, vitamins, etc.
7. If sauces are involved; what basic sauce and garnish, if any?; how could the sauce be improved?
8. After the practical, consider your results. How could you improve things? What mistakes, if any, did you make?

General

You should make notes. These notes are your own study and revision aids; use the workbooks and microfiche carefully and properly. Do not assume you already know everything on a given topic. Use the additional books and reference material to reinforce the learning.

The lecturers are there to assist you anytime you need help.
BUT THE ONUS IS ON *YOU*.

WE CAN HELP YOU TO LEARN — WE CANNOT LEARN FOR YOU

APPENDIX 4:

STUDENT ENQUIRY AS TO VALIDITY AND EFFECTIVENESS OF SYSTEM: RESULTS OF STUDY

1. DO YOU LIKE THE SYSTEM OF DACUM LEARNING BEING USED THIS YEAR?	Yes: 5 No: 7
2. IF THE ANSWER TO 1 IS 'YES' WHAT DO YOU LIKE MOST ABOUT IT?	
examples: 'allowed to choose the work we wish to concentrate on' 'the work we cover is not repetitive' 'I like the flexibility of the practical lessons' 'you can work at your own speed and go into things you like in depth'	
3. IF THE ANSWER TO 1 IS 'NO' PLEASE GIVE YOUR REASONS	
examples: 'prefer a more set theory lesson' 'I am not sure on what I've got to learn. . . .' 'because you tend to slip back going at your own pace' 'because I don't know if I'm making notes on the right things'	
4. ARE THE STUDY MATERIALS:	
EASY TO READ	11
NOT SO EASY TO READ	1
DIFFICULT TO READ	0
5. ARE THE STUDY MATERIALS:	
EASILY UNDERSTOOD	7
NOT SO EASILY UNDERSTOOD	4
DIFFICULT TO UNDERSTAND	1
6. IF THE ANSWER TO 4 IS 'DIFFICULT' WHAT WOULD YOU RECOMMEND AS ANOTHER METHOD?	

7. IF THE ANSWER TO 5 IS 'DIFFICULT' WHAT WOULD YOU RECOMMEND AS ANOTHER METHOD? examples: 'If the syllabus was done together the materials could be explained to the group and made easier for questions to be sorted out'	
8. DO YOU UNDERSTAND THE REFERENCING METHOD FOR FINDING NEEDED STUDY MATERIALS?	YES 9 NO 2
9. IF THE ANSWER TO 8 IS 'NO' WHAT WOULD YOU SUGGEST? example: 'the sheets are too long'	
10. DO YOU FEEL THAT YOU ARE PROGRESSING THROUGH THE COURSE AT A SPEED WHICH SATISFIES YOU?	YES 8 NO 4
11. IF THE ANSWER TO 10 IS 'NO' DESCRIBE YOUR PROBLEMS examples: 'learning what is necessary, where to start' 'my home and work commitments limit the homework I can do' 'because I don't feel I'm learning the correct way'	
12. DO YOU FEEL THAT ONE DAY A WEEK IS ADEQUATE, WHEN COMBINED WITH ON-THE-JOB EXPERIENCE, TO COMPLETE THE 706/2 COURSE SATISFACTORILY?	YES 10 NO 2
13. IN WHAT WAY HAS YOUR EMPLOYER CO-OPERATED WITH YOU TO MAKE THIS COURSE WORTHWHILE? examples: 'by discussing any problems which I may have' 'very little. . . .they haven't. . . . he's paying for it' 'she allows me to incorporate what I learn into menus'	

APPENDIX 5: IMPROVING THE EFFECTIVENESS OF CBVE TUTORS: A STAFF GUIDE TO USING THE CBVE APPROACH

It is not the aim of this document to give a detailed description of the elements of the CBVE system, but rather to offer advice on how it can best be used.

Using CBVE as an aid to teaching requires skill, patience, and a detailed knowledge of the system itself and the library of information available.

Students need to be taught how to use the system efficiently and how to organise their time in order to gain the most benefit from the system and the materials.

It is not a 'soft option'. It is very demanding on a tutor, who will initially have to resist the urge to revert to the easier 'chalk-and-talk' approach.

A tutor has to accept the roles of mentor, counsellor, and moderator, as well as that of teacher. It is essential that tutors are closely involved with their students in order to recognise the moment when detailed assistance is required.

Attention to the following points by tutors will help to ensure the successful use of CBVE by students.

1. Take time to ensure that you understand the working of the system and how it can be used to build up a customised curriculum.
2. Be sure of how your students are documented and profiled, and keep abreast of the paperwork involved.
3. Learn to find your way quickly and surely around the learning packages and recommended supplementary reading material.
4. At the start of each student's session, find out what each is studying and where the topic fits into his or her curriculum.
5. Negotiate with employers on what their contribution will be, and make sure they have sufficient information to complete the tasks allocated.
6. Be prepared to offer advice on the topic to be studied if a student is unsure.
7. Make sure that relevant study material is always available, accessible, and USED.
8. Show interest in each student and watch for warning signs that tell you all is not well.

9. Check students at random when they are doing work book 'end tests' to assess the effectiveness of their study.

10. Whilst competencies testing should as far as possible be on demand, do not undertake too many at the same time.

11. Remember that the criteria for competencies testing in cooking **include**: time; acceptable standard of finish; ecomony of ingredients and effort; and the degree of assistance and advice required.

12. In order to keep students working at a steady pace, make assessment of when each individual should be ready for a written assessment, and negotiate that date with the student concerned. Then help the student to achieve that goal.

13. Keep your records and the students' copies up to date; do not allow documentation to accumulate. A student will be motivated if he or she is able to see what has been achieved *growing* and what has yet to be achieved *diminishing*.

14. Finally, students will not learn entirely on their own. The CBVE approach is only as good as the tutors who are entrusted with its use. Students have demonstrated that they can take advantage of its flexibility, but, for many, learning is no longer a passive process and they have to be taught how to learn.

APPENDIX 6: CATERBASE

These materials are extracted from the Hotel and Catering Industry Training Board publication: *Assessing Vocational Skills at Work - The Caterbase Project.*

Definition of Caterbase

Caterbase is a work-based occupational qualification for the accommodation and catering industry. It is based on a modular breakdown of the competences allowing flexible recognition of the achievements of individuals employed in the industry.

Recognition within Caterbase is based on the attainment of specified performance criteria at work. Caterbase is not a training scheme and is not tied to any route for achieving the competences specified. It is open to all individuals working in the industry, whether following a formal training scheme or not, and is available equally to new entrants and established employees, regardless of age.

Caterbase forms an essential link within the vocational qualifications structure for the accommodation and catering industry and will be delivered through approved organisations in all sectors of the industry.

Assessment approach

Caterbase candidates will be assessed in their workplaces during the course of their normal work. No special set-piece tests will be required; instead there will be a continuous appraisal of performance in day-to-day work based on the monitoring and supervision of staff which is already an established feature of any well managed operation.

Each Caterbase module specifies clear and concise performance criteria which must be met in order for an individual to be credited with that module. Full consolidation of the competences covered in each module is required; the performance criteria must be met consistently, demonstrating not only the ability to perform, but the application to do so over extended periods and under normal industrial pressures.

Assessment will be carried out by technically proficient individuals in the workplace who have day-to-day contact with the person to be assessed. These assessors will be trained in the use of Caterbase and will be supported and controlled by more senior staff.

Responsibility for quality in Caterbase

The clear definition of performance criteria within Caterbase modules is an important contribution to providing a vocational qualification which has a recognised value within the industry. In conjunction with the Code of Practice and the Agreement with the Approved Organisation, which set out roles and responsibilities, a well defined framework for delivery and quality control is provided.

It is recognised that the professionalism and goodwill of the industry will be essential in achieving the full benefits of Caterbase. The emphasis is thus based on using contact opportunities for support and advice rather than an external intervention in assessments. Much of the responsibility for the quality of Caterbase will lie in the hands of the industry itself.

Nevertheless there will be an element of verification and an approved organisation will be required to provide access for this purpose. Where the Code of Practice and Agreement are not being fully implemented, and the situation cannot be satisfactorily resolved, approved organisation status may be withdrawn in the interests of the industry as a whole.

Categories of modules

Introductory; Food preparation; Food and beverage service; Bar and alcoholic beverage service; Front of house; Accommodation operations; Supervision.

Approved organisations

Caterbase can only be offered by approved organisations. An approved organisation will be authorised by Caterbase to carry out assessments within some or all of its establishments, as detailed in the Agreement.

The management and control of Caterbase will be achieved through whichever components of the organisational structure shall be most appropriate and which are agreed at the time of approval and detailed in the Agreement.

Approval will normally be given at company or division level. Although there may be cases where it is appropriate for an individual establishment to become an approved organisation, this would be the exception rather than the rule. Youth Training Schemes, Group Training Schemes and other umbrella organisations may apply for approved organisation status to operate Caterbase within establishments associated with them.

Modules

Caterbase Modules provide a comprehensive framework for the competences required in the accommodation and catering industry. The full range of modules will represent a greater range of activities than will be applicable to most approved organisations.

During approval it will be established which modules are relevant to the operations of the organisation and the Agreement will specify these modules as the only modules which the approved organisation is authorised to use.

The modules which an approved organisation is authorised to use will not necessarily all be relevant to every establishment within the approved organisation. The approved organisation must ensure that only appropriate modules are used within each of its establishments and must maintain a record of this information.

A helpful, accessible approach

To be of value to the industry Caterbase assessments must be helpful and accessible. Several features of the design reflect this concern; for instance, the adoption of operationally based 'employable units of skills' for the module system.

Caterbase is not intended to be a method of training, rather a definition of targets to be achieved. However, the materials are designed to assist the trainer.

Industry standards and establishment specific standards are brought together on one sheet, providing a ready focus for training standards. The accompanying instructions suggest using assessments in an 'open manner, the assessment standards, both general and specific being discussed by supervisor and trainee at the start of training so that both have clear agreed targets and methods of assessing progress.

The modular approach of Caterbase also provides a ready method of specifying job requirements.

Relationship to further education

Research into the industry's manpower has indicated that 94% of the workforce have no formal catering qualifications. This does not accurately reflect the skills of the industry's employees. Caterbase will provide recognition of the practical skills which individuals acquire through training and experience at work.

Caterbase does not therefore seek to displace further education qualifications but to complement and support them. Caterbase qualifications establish practical skills that are demonstrated consistently in working situations and under

industrial pressure. Further education qualifications establish flexibility and adaptability based on a mastery of underlying principles.

Caterbase and further education awards thus have different but complementary strengths. Each is incomplete without the other and we are moving towards a situation where full recognition of the competences required for employment in the industry is gained through the combination of industrial and further education qualifications. This will apply for City and Guilds and BTEC in England and Wales or SCOTVEC 16+ modules in Scotland.

Links are being forged with the various further education schemes so that the practical elements of these schemes are compatible with Caterbase. Eventually it will be possible for the Caterbase qualified individual to obtain further education qualifications through a short period of additional study, exemption being granted from practical aspects. In addition, the college student taking up employment will readily meet industry requirements as specified by Caterbase, because these will be the same standards as he has met in the practical content of the college course.

Caterbase will stand in its own right as a qualification for individuals whose aspirations are primarily practical. For others, it will provide a stepping stone toward previously unattainable further education qualifications, while full time college students will be able to gain industrial recognition of the skills to which they were introduced at college. Caterbase qualifications can only prove beneficial to an industry hungry for qualified staff.

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Objectives

The objects for which **The Further Education Unit (FEU)** is established are to promote, encourage and develop the efficient provision of further education in the United Kingdom and for that purpose:
a) to review and evaluate the range of existing further education curricula and programmes and to identify overlap, duplication, deficiencies and inconsistencies therein;
b) to determine priorities for action to improve the provision of further education and to make recommendations as to how such improvements can be effected;
c) to carry out studies in further education and to support investigations of and experimentation in, and the development of further education curricula and to contribute to and assist in the evaluation of initiatives in further education;
d) to disseminate and publish and to assist in the dissemination and publication of information about recommendations for and experiments and developments in further education.

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